

ALCOHOL AND SOCIETY

A RESEARCH REPORT FROM IOGT-NTO AND
THE SWEDISH SOCIETY OF MEDICINE

2013 THEME:

YOUTH AND YOUNG ADULTS

**A RESEARCH REPORT FROM IOGT-NTO AND
THE SWEDISH SOCIETY OF MEDICINE**

ALCOHOL AND SOCIETY

Foreword	By Anna Carlstedt and Peter Friberg	5
Interview	Young people are our future	6
Main article	Alcohol-related harm among Swedish youth and young adults: problems and possibilities	8
Retrospective	Swedish experiments with beer sales	23
Interview	Seven young people talk	30
Current research	Alcohol and complications after surgery	33
Current research	Alcohol, pregnancy and child development	35
Current research	Do restaurants opening hours matter for violence?	37
Current research	Which matters more? The risks or the benefits of alcohol?	39
Current research	Does abstinence mean you die younger?	41
The report's authors	Presentation of the research group	42



Research has, throughout history, been the driving force behind development and has built the foundations upon which our contemporary society rests. Where, for example, would we be without people such as Leonardo da Vinci, Albert Einstein or Marie Curie? But research does not automatically result in a better society. The findings and knowledge that research generates must also be accepted and used by politicians and other power-brokers if it is to yield results – and it is here that the challenge lies.

Alcohol policy is one area in which research is very much key. Alcohol is an addictive substance and the harm that can be linked to it costs society billions of kronor every year. And that is quite aside from the personal tragedies that affect so many people, either directly or indirectly, as a result of the harmful effects of alcohol. The laws and preventive measures that we use to limit alcohol-related harm are based on research. The problems that alcohol causes are global and it is by helping each other and studying the ways in which different countries manage the alcohol issue that we can, ourselves, become more efficient when it comes to limiting this harm.

When we set out to produce this report, we brought together five of the world's leading alcohol researchers and assigned them a task. We asked them, based on an area that our organisations had selected as being both important and topical, to review the latest international research in this area, to describe the scientific basis for its findings, and to collectively reach conclusions on measures of particular relevance for us, here in Sweden and the Nordic region. You are holding the end product of their work – which comprises several different sections - in your hand. The researchers' contribution to this report is the main article on alcohol consumption among youth and young adults, but the researchers have also conducted an overview of the remaining flora of alcohol-related research and cherry picked five pearls from the past year's findings. There are also two interviews which complement the results of the research: the first is with the Chair of the research group, Harold Holder, and is where you can find out more about what motivated him to produce the report and his views on Sweden's alcohol policy. The second interview gives a voice to some of the young people who are the main subject of this report. We met with several young people who gave us their views on alcohol and on the results produced by the researchers.

We hope that you will regard this report as both a tool and a support. There are always methods or ideas that are just that little bit better than the ones we had before. That is how society develops and that is how we will continue to limit the harmful effects of alcohol.

Anna Carlstedt



Photographer: Emelie Spjuth Svård

Peter Friberg



Anna Carlstedt: Chair, IOGT-NTO

Peter Friberg, Chair, The Swedish Society of Medicine

A black and white portrait of an elderly man, Harold Holder, with a gentle smile. He has short, light-colored hair and visible wrinkles on his face. He is wearing a light-colored, collared button-down shirt. The background is dark and out of focus, showing some foliage. The text 'INTERVIEW' is in a red box in the top left, and 'YOUNG PEOPLE ARE OUR FUTURE' is in a large red box across the middle. Below that, 'interview with Harold Holder' is in a smaller red box.

INTERVIEW

YOUNG PEOPLE ARE OUR FUTURE

interview with Harold Holder

Harold Holder is one of the world's leading alcohol researchers who has led the work on producing this year's theme article on youth drinking and prevention. He believes that research findings should be of practical use, and research was the cause of his fondness for Sweden, when he came here many years ago.

"My friends often ask me why on earth I come here so often," says Harold Holder. The American alcohol researcher has been visiting Sweden an average of twice a year, every year, since 1988. And why does he keep coming back? Well, he likes Sweden. He likes the countryside and the good food, but above all, he likes Sweden's attitude to research and the formulation of Swedish alcohol policy.

"You have a tradition of thinking about research and of using it in practice, as the basis for political decision-making, for example. Plus you're the world leaders when it comes to using alcohol policy tools to reduce alcohol-related harm," says Harold Holder.

Swedish alcohol policy fascinates him and he has a partnership with both Swedish researchers and decision-makers stretching back many years. His CV is a lengthy one and over the years, he has published hundreds of different peer-reviewed articles.

Certain events were critical in terms of his career development, such as reading the Pink Book published in the 1970s. At the time, Harold Holder was working as a treatment researcher and it was thanks to the Pink Book that he came into contact with Nordic alcohol research. Alcohol abuse was primarily seen as an individual problem in the USA in those days and "Alcohol Control Policies in a Public Health Perspective" by Kettil Bruun et al, or the Pink Book as it became known, not only made a deep impression on Harold Holder, but also had a significant impact on the international debate on alcohol policy and alcohol research.

"It changed my views on both alcohol problems and my career. The research presented in the book showed that alcohol policy makes a difference and that it is possible to prevent alcohol-related problems," remembers Harold Holder.

In the late 1980s, he travelled to Sweden for the first time with the aim of studying the history of and research into Swedish alcohol policy at closer

quarters, and of investigating whether this policy could be transferred to the USA.

25 years have now passed since that first visit to Sweden and this past autumn, it was time for yet another trip. This time, a group of world-leading alcohol researchers, led by Harold Holder, would get together at Wendelsbergs Folk High School where they would spend a few days compiling research into youth drinking and prevention.

"Young people are our future and what happens to them during their developmental years will affect them for the remainder of their lives. If we can prevent risky alcohol use by these young people, and prevent the harm that alcohol causes, we can protect them and increase their potential for living long and productive lives," says Holder.

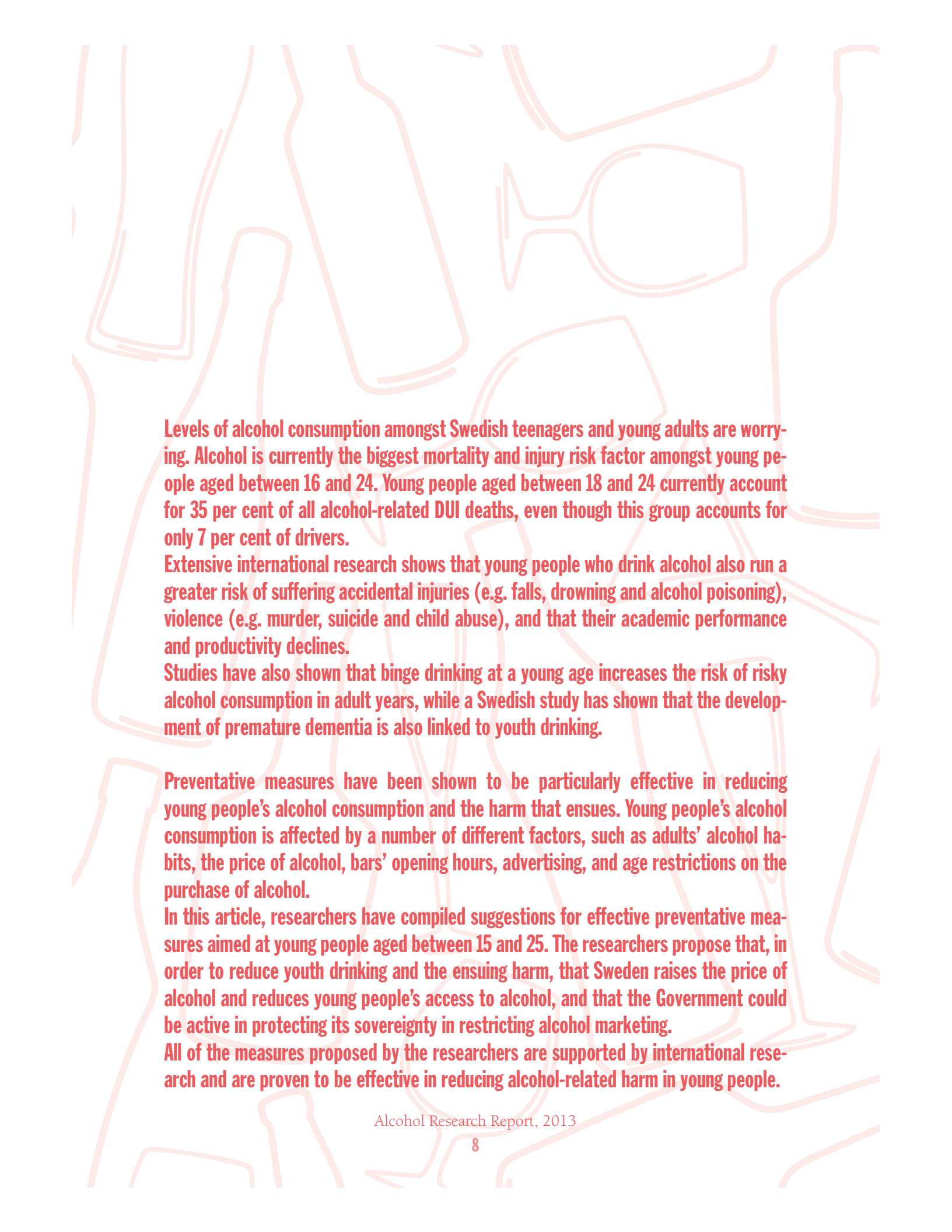
Swedish school surveys in recent years have reported a fall in youth drinking, but Harold Holder believes that what we should really be looking at is the trend in alcohol-related harm, which is showing the opposite trend. Alcohol is currently the biggest mortality and injury risk factor amongst young people aged between 16 and 24. "People who believe that young people drink in moderation are naïve. Young people don't have wine tasting sessions," says Holder.

The EU and the Swedish Government have a shared goal – to reduce alcohol consumption and the ensuing injuries and illness amongst young people, and the hope of the research group is that this report will be disseminated across society and find its way into the political debate.

"We're not telling the decision-makers what they should be doing about youth drinking. What we are doing, however, is offering them suggestions as to effective measures that we know work and which they can use as a basis for their decision making on a range of issues," says Holder.

And if he, himself, were a decision-maker? One of the things he'd focus on is parents and other adults supplying young people with alcohol. But new assignments await Harold Holder, because he has no intention of slowing down, despite having reached retirement age.

"Because now I have the time to do the things I like doing, and I'd rather stay active in this field than spend my time doing crosswords and jigsaw puzzles and playing bridge. I'm not a circus pony – I only do the things that I enjoy doing," ends Harold Holder.



Levels of alcohol consumption amongst Swedish teenagers and young adults are worrying. Alcohol is currently the biggest mortality and injury risk factor amongst young people aged between 16 and 24. Young people aged between 18 and 24 currently account for 35 per cent of all alcohol-related DUI deaths, even though this group accounts for only 7 per cent of drivers.

Extensive international research shows that young people who drink alcohol also run a greater risk of suffering accidental injuries (e.g. falls, drowning and alcohol poisoning), violence (e.g. murder, suicide and child abuse), and that their academic performance and productivity declines.

Studies have also shown that binge drinking at a young age increases the risk of risky alcohol consumption in adult years, while a Swedish study has shown that the development of premature dementia is also linked to youth drinking.

Preventative measures have been shown to be particularly effective in reducing young people's alcohol consumption and the harm that ensues. Young people's alcohol consumption is affected by a number of different factors, such as adults' alcohol habits, the price of alcohol, bars' opening hours, advertising, and age restrictions on the purchase of alcohol.

In this article, researchers have compiled suggestions for effective preventative measures aimed at young people aged between 15 and 25. The researchers propose that, in order to reduce youth drinking and the ensuing harm, that Sweden raises the price of alcohol and reduces young people's access to alcohol, and that the Government could be active in protecting its sovereignty in restricting alcohol marketing.

All of the measures proposed by the researchers are supported by international research and are proven to be effective in reducing alcohol-related harm in young people.

ALCOHOL-RELATED HARMS AMONG SWEDISH YOUTH AND YOUNG ADULTS: PROBLEMS AND POSSIBILITIES

Youth and young adult drinking and associated harm for Sweden and other Nordic countries is of special public concern. This article contains a summary of prevention strategies to reduce alcohol-related harm from youth and young adults covering the ages of 15 to 25 years of age. Observations and recommendations of this article are based upon comprehensive reviews of the scientific literature concerning effective prevention strategies. This review does not include strategies with limited or no overall evidence for effectiveness in reducing population level harms, these for instance include school based educational programs and media awareness campaigns. In addition, while a number of possible strategies have been developed and tested world-wide, this article provides focus on strategies with special relevance for the Swedish and Nordic situation.

BACKGROUND: ALCOHOL CONSUMPTION AND RELATED PROBLEMS

Worldwide, excessive alcohol consumption is a leading cause of death, hospital admissions, social problems and economic costs. In Europe, per capita consumption is twice the world average, and in the EU alcohol causes approximately 120 000 premature deaths annually, or 12% of all deaths among those aged 15-64 years.¹ In Sweden alone, there are approximately 4 500 alcohol-attributable deaths annually.²

As a risk factor, alcohol consumption places a disproportionate burden on youth and young adults, and is a leading risk factor for a variety of

youth-related outcomes including unintentional injuries (e.g., motor vehicle crashes, falls, drowning, alcohol poisoning), violence (homicide, suicide, domestic violence, sexual assault, child abuse and neglect), sexually transmitted infections, unintended pregnancy, alcohol dependence, poor school performance, and lost productivity.³ In addition, there is a robust body of evidence demonstrating that drinking and binge drinking initiation at a young age is strongly predictive of excessive consumption and related outcomes in adulthood.⁴ Alcohol use in adolescence, particularly risky use, has in a Swedish study also been found to be associated with increased risk of future disability pensions, both pensions at an early age (below 40) and at older ages.⁵ In another recent longitudinal study of nine risk factors for early onset dementia on Swedish conscripts alcohol intoxication in youth was the largest risk factor and led to an almost 5-fold increase in early onset dementia.⁶ Alcohol use in adolescence could therefore be considered an important marker for future reduced work capacity.



Accordingly, protecting young people and children from alcohol is one the five priority areas in the 2006 EU alcohol strategy⁷, and the Swedish government's strategy for Alcohol, Narcotics, Doping and Tobacco aims to reduce the number of young people that start to drink at a young age and to reduce harmful youth alcohol consumption.⁸

TYPE OF PROBLEM	PER CENT	APPROXIMATE NUMBER OF STUDENTS
Quarrels	34,8	39 300
Lost money or valuables	25,0	28 000
Unprotected sex	22,6	25 500
Accident or injury	19,2	21 500
Problems with relations to friends	19,0	21 500
Unwanted sex	13,2	15 000
Lower achievement in school	9,8	11 000
Being robbed or stolen from	6,0	7 000
Been to hospital	4,5	5 000

Self-reported problems due to alcohol consumption, 2nd grade high school students, Sweden 2012¹³

Although excessive alcohol consumption in Sweden is high in absolute terms and by international standards, it is lower than for most Nordic and EU countries, in part because Sweden has enjoyed a restrictive alcohol policy environment in comparison with most other EU nations, and was the first country to develop an alcohol monopoly. However, since Sweden entered the EU in 1995, some important alcohol policies have been weakened.⁹ During this period, sales from the alcohol retail monopoly, restaurants and grocery stores have increased by 22 per cent to 7.3 liters pure alcohol per capita. Total consumption, which also includes alcohol smuggled and legally imported by travelers, is estimated to have increased 17 per cent during the same time, to 9.4 liters.¹⁰

Total mortality rate for those aged 16-24 years has increased in Sweden over the past decades, despite decreased mortality in the Swedish general population.¹¹ Alcohol is the leading risk factor for death and injury among this age group. Since 1995, several important alcohol-related problems have increased, including alcohol poisoning deaths, violent events and single vehicle nighttime crash fatalities which are heavily associated with youth and young adults.¹²

Beyond deaths, the prevalence of alcohol-involved problems reported by Swedish school surveys is also of concern (see table). The most

common problems included accidents or injuries, unprotected or unwanted sex, and quarrels. Despite apparent declines in the past five years, youth consumption remains high. For example, 2nd grade high school boys, i.e. all under legal drinking age, reported consuming an average of 5.7 liters of ethanol in 2012, and almost half (45%) reported risky drinking (>14 drinks per week, or binge drinking in the past month), girls consumed 3.4 liters annually and 38% risk drinking prevalence.¹⁴ Based on survey estimates 17 years olds in Sweden drank more than 1 800 000 bottles of vodka or almost 21 million cans of strong beer in 2012.

EFFECTIVE POLICY INTERVENTIONS FOR YOUTH AND YOUNG ADULTS

Alcohol policies are the most effective means by which to reduce excessive drinking and related harms for both adults and youth. The most effective policy interventions change drinking through several mechanisms, including by decreasing the economic availability of alcohol (i.e., by raising prices) or by decreasing its physical availability. Effective environmental policy strategies reduce consumption even among those who drink heavily or who are alcoholic. In particular, policies can reduce binge drinking



and related problems, which are common among young drinkers. Potential policies for reducing youth and young adult drinking and associated harms include those which are directed at the entire population and also those which are specific to the youth population.



General alcohol policies designed to impact the entire drinking population can and do impact youth and young adult drinkers as a result of changes in the overall drinking environment through marketing, prices, and other changes. In this instance youth and young adult drinkers are simply a part of the general drinking population. In addition, the drinking behavior of adults can also influence youth drinking. This is not surprising as adults are a major source of alcohol supplied to youth. Parents have a strong influence on their youngster's drinking, and adults establish the policies and cultural norms. A recent study from the US on the relationship between alcohol taxes, as a general population policy measure, shows that youth drinking is both affected by alcohol taxes and by adult drinking, independently.¹⁵

In summary, general population policies can be effective for youth and young adults. Adults are models for drinking behaviors, set the policy environment and provide most alcohol that youth consume.

PRICING POLICIES

When things cost more people buy less. This principle applies to all commodities, and alcoholic beverages are no exception. For alcoholic beverages, young people's consumption is particularly sensitive to price.¹⁶

The effect of price on overall alcohol consumption is well established. A compre-



hensive review identified over 1 000 estimates of this relationship.¹⁷ On average, a 10% increase in price results in significant reductions in overall consumption of around 5%. Of more importance, another comprehensive review showed that price increases result in significant reductions in illnesses and injuries associated with alcohol use. One recent study reported that a 10% increase in the price of least expensive alcohol resulted in an immediate 9% reduction in alcohol-related injuries and poisonings, outcomes for which younger people are overrepresented.¹⁸ There are also specific studies linking price increases to reductions in binge drinking by young people with larger impacts than the general population.¹⁹

As a consequence of the strong international research evidence, alcohol pricing strategies are recommended as one of the most cost-effective alcohol policy measures by international organisations such as WHO, World Bank and the World Medical Association.



Inflation-adjusted consumer price index, CPI, of alcohol beverages have decreased in Sweden since 1995. Using 1995 as base year the CPI in 2011 was 72 for strong beer, 90 for wine and 93 for spirits.²⁰ The tax rates have decreased 29% for beer from 1995 to 2012, 18% for wine and increased 6% for spirits.²¹ Adjusted for inflation the rates have decreased 42% for beer, 33% for wine and 14% for spirits.

SMUGGLING/ILLEGAL RESALE AND PRIVATE IMPORT

In addition to legal and recorded retail sale of alcohol within Sweden, alcohol can also be purchased or smuggled in from abroad and then provided or illegally sold to youth and young adults. It has been suggested that price increases might stimulate greater demand for lower cost alcohol from both smuggling as well as private import resulting in increased consumption. However, the limited research on this topic suggests that government price increases result in decreased overall alcohol consumption, despite

the influence of smuggling and private imports. Furthermore, smuggled alcohol accounts for only 20% of alcohol consumed by youth.²² This is confirmed by several studies that show that when alcohol taxes have been lowered due to fears about smuggling, alcohol-related harms have increased.²³

A similar concern was expressed concerning price increases for tobacco products, but tobacco research has well established that while smuggling and legal importation by travelers can partially reduce the public health benefits of higher prices, these benefits are not eliminated. Furthermore, tobacco use declines and revenues almost invariably rise following a tax increase, despite small increases in smuggling.²⁴

ADVERTISING AND MARKETING RESTRICTIONS

The international literature suggests that young people are exposed to a great many alcohol promotions variously both in the print and electronic media with internet advertising increasingly important. Two lines of evidence suggest this exposure does more than influence their selection of brands to drink but may also increase consumption and risk of harms. Firstly, studies which have measured exposure to adverts in traditional media, at point-of-sale and alcohol-branded merchandise, have consistently found significant effects on the likelihood that adolescents will start to use alcohol, and to drink more if they already use alcohol. In one study it was estimated that for every dollar spent on advertising per capita there was a 3 percent increase in consumption by 15-25 year olds. Secondly, an analysis of data from 20 countries over 26 years found that introducing beer and wine or spirits in one extra media outlet (radio, TV or print) raised consumption by 5 to 8 percent.²⁵



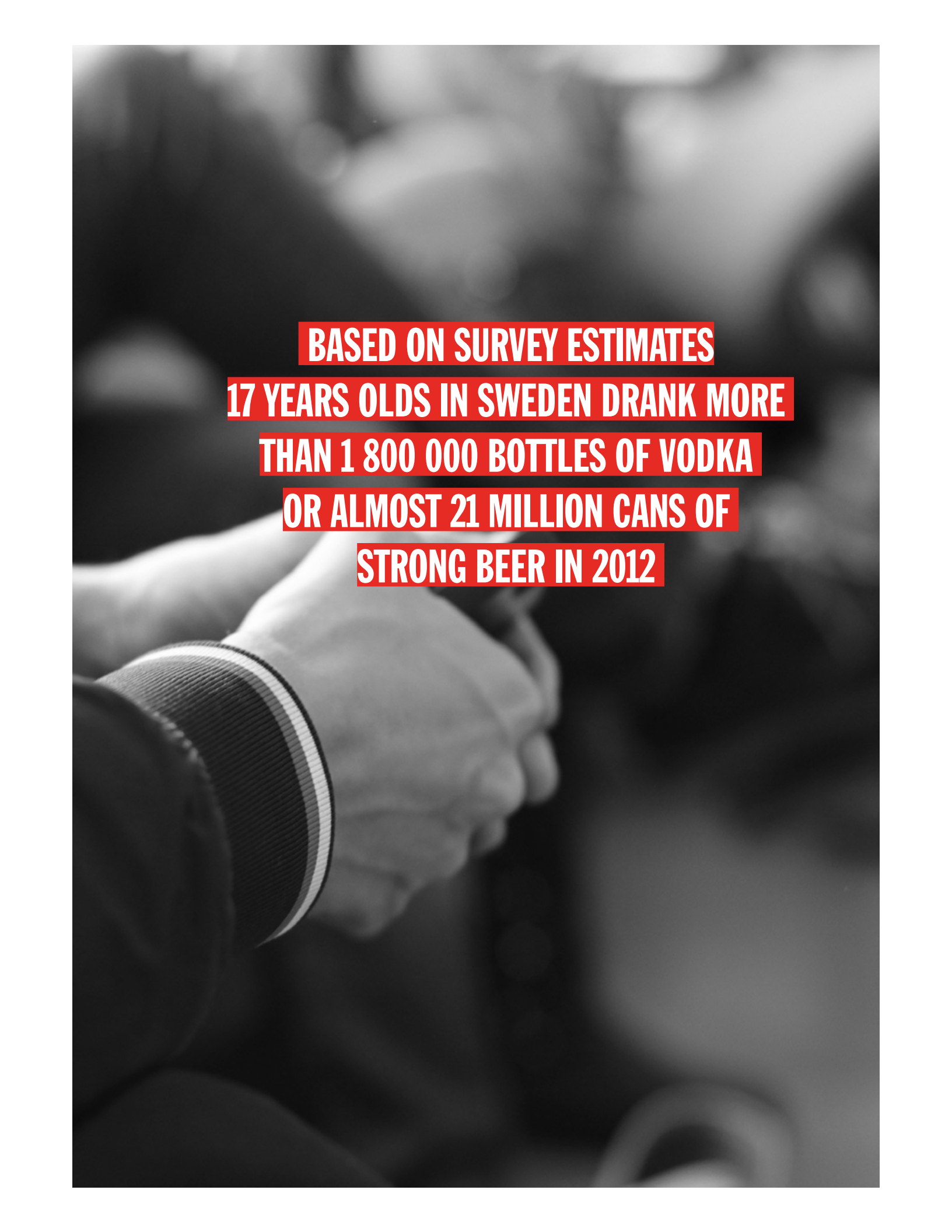
OUTLET DENSITY

Outlet density is a measure of the number of licensed premises operating within a defined area and is often expressed as a population rate or rate per road way miles. Comprehensive international reviews of several decades of research have concluded that there is robust and growing evidence that licensed outlet density is associated with alcohol-related problems.²⁶ The relationship is such that as outlet density increases so do alcohol-related harms. Evidence is particularly strong for interpersonal violence but effects on road crashes and drink driving offences have also been found. A range of other alcohol-related



harms have been less often investigated but have nonetheless found significant associations including homicide, child abuse and neglect, self-inflicted injury, sexually transmitted disease, and alcohol-related deaths and hospital admissions.²⁷ International reviewers have concluded that there is "substantial evidence that outlet density is related to rates of heavy episodic drinking by youth and young adults."²⁸ Several studies have also confirmed that alcohol-related harms occurring among young people are influenced by changes in outlet density.²⁹

Density of both on- (e.g. hotels, restaurants, nightclubs) and off-site (e.g. liquor stores) alcohol outlets have been shown to influence alcohol-related harms. Recent Australian research



**BASED ON SURVEY ESTIMATES
17 YEARS OLDS IN SWEDEN DRANK MORE
THAN 1 800 000 BOTTLES OF VODKA
OR ALMOST 21 MILLION CANS OF
STRONG BEER IN 2012**





which has taken volumes of alcohol sales made by licensed outlets into account has suggested that outlets which sell alcohol for only off-site consumption (e.g. take away liquor stores) influence levels of violence occurring in both the home and on-site licensed premises (e.g. pubs, restaurants). The authors suggested that this was likely due to pre-loading drinking behavior encouraged by the substantial price differences between the cheaper off-site stores and the more expensive drinks sold at hotels, nightclubs and restaurants.³⁰

HOURS AND DAYS OF SALE

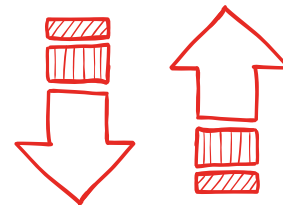
Restrictions on the hours and days that alcohol can be purchased from retail outlets are a common feature of alcohol policy and regulation. Many studies, utilising a range of different methodological approaches, have investigated the impact of changes to trading hours for on-site licensed outlets on levels of alcohol consumption and rates of related harms. A comprehensive review of studies published since 1965 (including several from Nordic countries) concluded that among higher-quality studies longer trading hours for pubs led to increased alcohol consumption and related harms including interpersonal violence and road crashes/drink driving.³¹ Since that review, several studies of the effects of reductions in trading hours have confirmed that restrictions on trading hours are associated with reductions in alcohol-related harms.³² Of special note, a recent study of small changes in trading hours across 18 Norwegian cities concluded that for each additional hour of night trading assaults increased by 16%.³³

Bars and nightclubs are a venue of choice for young people and they contribute disproportionately

to harm which occurs at these places. There is some evidence from Australian studies to suggest that young males who drink at pubs with later trading hours and who are involved in late night impaired driving offences have higher breath alcohol levels than their counterparts who drink at hotels with standard closing hours (i.e. midnight).³⁴

DRINKING AGE CONTROLS

One notable public policy has involved establishing a minimum legal drinking or retail purchase age to reduce the consumption of alcohol by youth. A comprehensive review of international research on the effects of age restrictions found that raising the legal purchase age reduced drinking and associated problems and lowering the legal age increased harm.³⁵ Other research also found that decreasing the purchase age was associated with increased harm.³⁶ More recently, lowering of the drinking age in New Zealand from 20 to 18 was related to increases in traffic injuries among 15 to 19 year olds and in prosecutions for disorder offences among 14 to 15 years old.³⁷ A systematic review of 33 evaluations of age purchase laws in the United States, Canada, and Australia found an overall decline of 16% in alcohol-involved traffic crashes,³⁸ following the establishment of higher age restrictions. In summary, establishing a minimum age on alcohol purchases can be an effective policy to reduce youth alcohol-related harms when regularly enforced.





STATE RETAIL MONOPOLIES

Retail monopolies for sale of alcohol are a Swedish invention from mid-19th century. The idea spread to the other Nordic countries, except Denmark, and to the United States and Canada. The motive for the original monopolies was to exclude the forces of private profit interest from the sale of alcohol in order to reduce consumption and harm.

Retail monopolies are effective in reducing sales and consumption. This can be seen from what happens when alcohol retail monopolies are abolished. In a review of 17 studies on privatization of monopolies there was a 44 per cent median increase in per capita sales following privatization.³⁹ A modeling of the potential consequences of privatizing Systembolaget, the Swedish state retail monopoly, estimated that this would lead to an increase in consumption of 37 per cent if alcohol were to become available in grocery stores. This in turn was estimated to lead to an increase in several categories of alcohol-related problems, including 2 000 additional deaths annually and 20 000 assaults.⁴⁰

Alcohol retail monopolies influence drinking

in the general population through a number of mechanisms such as outlet density, trading days and hours, price controls and marketing. Monopolies also have specific effects on youth drinking.

Drinking age control

Studies on compliance with minimum legal drinking age in Finland and Norway have shown that the monopoly outlets are significantly better than grocery stores at controlling the age of young people at purchase attempts and to refuse sales.⁴¹ In Sweden, where the age limit is 20 years, all monopoly outlets undergo regular inspection to test whether mystery shoppers aged 20-25 years are able to purchase alcohol without showing ID. Approximately 6 000 test purchases are performed in the monopoly outlets per year. In 2012 only 5 per cent of the mystery shoppers were able to buy alcohol without showing ID;⁴² among the 20 year old mystery shoppers only 1% were able to buy alcohol.⁴³ In contrast, studies of purchase attempts (to buy lower strength beer) in Swedish grocery stores have shown that 18 year olds, who looked young for their age, were able to buy in approximately two thirds of

cases.⁴⁴ Studies from other countries have also demonstrated that around 50 percent of purchase attempts of underage persons succeed in private liquor stores.⁴⁵ In a comparison of US states with alcohol retail monopolies to non-monopoly states, high-school students in monopoly states reported fewer drinkers and less binge-drinking. There was also a lower alcohol-impaired driving death rate in monopoly states.⁴⁶ The age limit in the US is 21.

Outlet density and days and hours of sale

Alcohol monopolies typically have considerably fewer stores compared to a system with privatized sales. In Sweden Systembolaget has around 420 liquor stores while there are almost 8 000 grocery stores. In addition, the monopoly can restrict the number of days and hours of alcohol sales which is an effective way to reduce sales and problems related to drinking.

Marketing

With a non-profit-maximizing monopoly the need for advertising and marketing is minimized. With privatization alcohol retail sales advertising is likely to increase, both in general advertising channels and promotion and marketing activities in the stores, that is, point-of-purchase marketing.

LEGAL ALCOHOL LIMITS FOR DRIVING

Alcohol-related road crashes account for a high proportion of premature deaths in many developed nations. In Sweden approximately 24% of drivers who died in road crash fatalities 2012 were alcohol impaired.⁴⁷ Young people aged 18-24 are over represented among road deaths and in Sweden. Of all fatalities involving alcohol-impaired drivers this age group account for about 35% of all fatalities, while only



representing 7% of all drivers.⁴⁸

Regulations designed to reduce the road toll have been introduced in most countries. This is most often achieved by establishing a legal blood alcohol level beyond which it is illegal to drive. In 1990 Sweden reduced the legal blood alcohol limit (BAL) for driving from 0.05% to 0.02% -- making the Swedish legal BAL among the lowest in the western world. A high quality study demonstrated that there was a 7% reduction in all road crashes and a 10% reduction among fatalities following the introduction of 0.02% BAL.⁴⁹ Consistent enforcement of legal alcohol limits for driving is important to maintaining the impact of legal driving limits. Random Breath Testing by police has been repeatedly shown to be a highly effective means of enhancing deterrence to drink and drive.⁵⁰ Sobriety checkpoints as applied in the US have also been found to be effective.⁵¹ In Sweden, police undertake activities which support regular enforcement and in 2012 Swedish police conducted 2.2 million breath tests.

LOCAL PREVENTION

Prevention policies can be applied to an entire country or region but can also be applied at the local or municipality level. Such interventions typically combine community action and mobilization as well as specific application of general and youth specific interventions and include efforts to change local alcohol availability, consumption and harms. Sweden has established alcohol- and drug coordinators in most municipalities with the task of mobilizing communities to prevent harm. Sweden has also created a national infrastructure for coordination of substance abuse prevention at the national, regional and local levels.

One example of a community prevention effort in the U.S. which utilized general as well as specific youth policy interventions occurred in a 5-year project in California and South Carolina using mobilization by using media and other channels, responsible Beverage Service including



LEMON
SLICE



MOJITO



WHISKEY



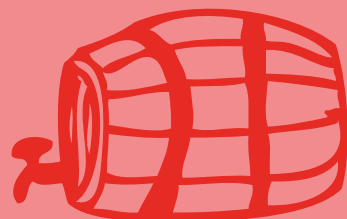
MINT



TEA



SUICE



WATER



DRINKS

both server training and enforcement, limiting retail sales to youth, drinking and driving and reducing number of alcohol outlets. These five re-enforcing strategies achieved a 10% decrease in night-time injury crashes and a 43% decline in assault injuries in emergency departments for adults as well as youth.⁵²

Licensing of sales of alcohol in restaurants is the responsibility of municipalities in Sweden. Restaurants and bars are popular with young adults and contribute disproportionately to hazardous drinking and related harms. World-wide, sales to intoxicated and under-aged persons are common and frequently associated with harmful outcomes such as motor-vehicle crashes and assaults. A recent study in Sweden demonstrated that systematic training of alcohol servers can achieve an overall reduction in overall assaults in those municipalities which completed such training.⁵³ A community intervention to reduce youth violence in Stockholm in connection with graduation parties in restaurants has demonstrated effectiveness. The intervention included co-operation between restaurant owners and police, information to students and parents, and increased enforcement from the police and the municipality licensing board. The intervention led to a 23 per cent reduction of violence-related emergency room visits by adolescents aged 18-20 years during the two spring months when most student graduation parties take place.⁵⁴

The utilization of effective interventions at the local level is essential. In Sweden, the so called Six Community Trial achieved no significant effect on consumption or harm because it relied largely on less effective educational strategies.⁵⁵

CONCLUSIONS AND RECOMMENDATIONS

While there have been some indications of reduced drinking levels among Swedish youth in very recent years according to some survey data, levels of risky drinking and related harms among

young people in Sweden remain high and are of continuing concern. Indeed some indicators of serious harms such as deaths from alcohol poisoning, alcohol-related road crashes and violence show increasing trends. Sweden retains some distinct strengths in its overall response to alcohol-related problems despite the undermining of the government control over the distribution of alcohol as a consequence of private importation and smuggling. Some of these strengths are highlighted below followed by areas where we recommend improvements.

Areas of strength to be sustained:

RETAIL MONOPOLY

The great majority of alcohol consumed in Sweden is still sourced from government owned shops so that significant controls are retained on key tools for prevention of harmful drinking among young people, namely limiting the density of alcohol outlets, on the hours of sale, on point-of-sale promotions and on prices;

IMPAIRED DRIVING LAWS AND ENFORCEMENT

Young people are overrepresented among deaths and injuries caused by alcohol-related crashes. Sweden has some of the strictest impaired driving laws in the world with low permitted BAC levels and the ability to use random roadside testing;

MAINTAINING RELATIVELY HIGH TAXATION LEVELS ON SPIRITS

While spirits are a relatively small proportion of overall consumption in Sweden, levels of taxation on spirits have largely kept pace with inflation and remain higher than in many other EU countries;



MOBILISATION OF COMMUNITIES IN MUNICIPALITIES

Many effective prevention strategies can be implemented at the local level. Sweden has successfully put in place structures to mobilize local communities and municipalities as an essential first step or mechanism for the implementation of future prevention initiatives.

Areas for improvement:

TAX AND PRICE INTERVENTIONS

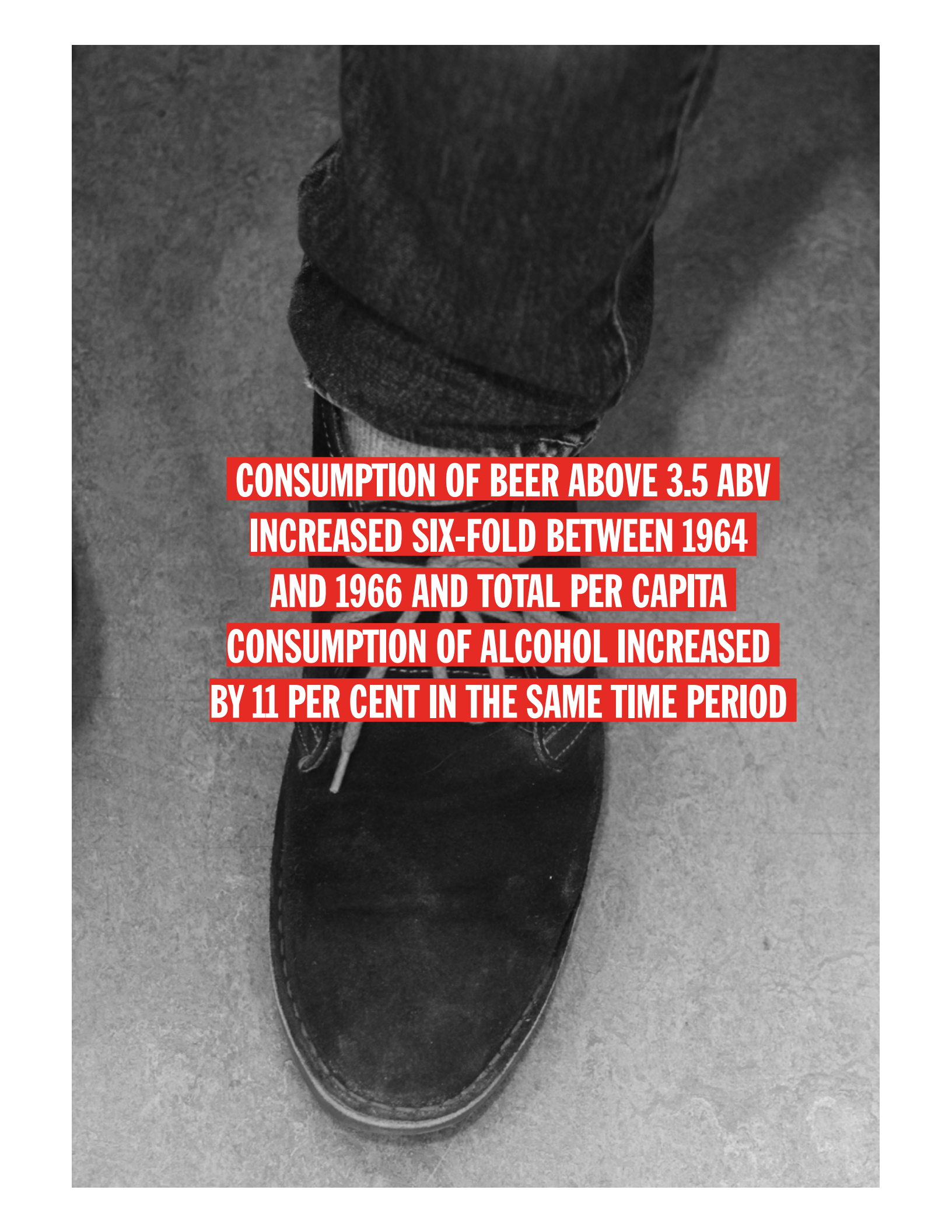
Tax and price interventions are the most important means by which to prevent alcohol related harms, and both prices and taxes, with the exception of spirits taxes, have eroded in real terms since 1995. At a minimum, a goal should be to at least maintain alcohol prices (inclusive of tax) in the face of inflation and rising personal income.

REDUCED ACCESS TO ALCOHOL

Reduced access to alcohol based on age restrictions has been shown to delay drinking initiation, reduce binge drinking among youth, and protect against alcohol problems in adulthood. Although Sweden has a minimum legal drinking age, the vast majority of underage youth consume alcohol and almost half report past-month risky drinking. In aggregate, therefore, age restrictions in Sweden are not working. There are a number of sources of youth alcohol, and a variety of ways of reducing overall access. In Sweden, particular targets for reduced access among youth are monitoring illegal sales in private shops, bars, restaurants and clubs. Furthermore policies to reduce the social provision of alcohol, e.g. adults, friends and family, are needed.

MARKETING INFLUENCES YOUTH ATTITUDES ABOUT ALCOHOL

Marketing influences youth attitudes about alcohol, affects brand selection, and likely contributes to increased consumption as well. Until relatively recently, Sweden did not allow alcohol advertising in magazines or on television. The rise of advertising on television and in social media is of particular concern, and the Swedish government could be active in legal proceedings protecting its sovereignty in restricting alcohol marketing.



**CONSUMPTION OF BEER ABOVE 3.5 ABV
INCREASED SIX-FOLD BETWEEN 1964
AND 1966 AND TOTAL PER CAPITA
CONSUMPTION OF ALCOHOL INCREASED
BY 11 PER CENT IN THE SAME TIME PERIOD**

SWEDISH EXPERIMENTS WITH BEER SALES



In 1965 so called medium-strength beer, up to 4.5 percent alcohol by volume, was allowed to be sold in grocery stores in Sweden. The number of stores selling medium-strength beer increased from less than 300 monopoly stores to over 10 000 grocery stores. Consumption of beer above 3.5 abv increased six-fold between 1964 and 1966 and total per capita consumption of alcohol increased by 11 per cent in the same time period.⁵⁶ In 1977 the sale of medium strength beer in grocery stores was repealed and was again only allowed to be sold in the monopoly stores. Per capita consumption decreased by 8 per cent between 1976 and 1979 as a consequence of the repeal. The decline in consumption seems to have been largest among youth. Two surveys in 1977 and 1979 showed a decrease in consumption among 15 year old students of about 20 per cent. Hospitalizations with diagnoses of alcoholism, alcohol psychosis and alcohol intoxication decreased significantly for youth after the repeal, as did motor vehicle accidents.⁵⁷

In Finland before 1969, beer above 2.8 per cent alcohol by volume was only available in the 132 state monopoly stores. That year, medium-strength beer was allowed to be sold in over 17 000 grocery stores and almost 3 000 cafés. Sales of medium strength beer increased by 242 per cent. At the same time the number of monopoly retail stores increased by 22 per cent. Alcohol consumption increased in the whole population. Women, youth and people living in previously dry areas were affected more than average.⁵⁸ The sale of medium-strength beer in grocery stores in Finland has not been repealed. The effect of availability for youth on prenatal exposure and subsequent long-term consequences can be seen from a Swedish experiment where strong beer was sold in grocery stores instead

of in monopoly stores in two counties for eight months during 1967-1968. Prenatal exposure to alcohol is regarded as one of the main preventable causes of mental retardation. The range of damage includes mild and subtle changes, such as slight learning difficulties or physical abnormality, through full-blown Fetal Alcohol Syndrome (FAS) including severe learning disabilities, growth deficiencies, abnormal facial features, and central nervous system disorders.

Between November 1967 and June 1968 strong beer with a maximum of 5.6 per cent alcohol by volume was allowed to be sold in grocery stores in two counties in the west of Sweden. The experiment was planned to run from November 1967 until the end of 1968 but was ended prematurely in July 1968 due to a sharp increase in alcohol consumption in the experimental regions, particularly among youths. During the first six months of 1968, strong beer consumption per capita increased ten-fold in the experimental regions as compared to the year prior to the experiment. Availability for youth increased markedly during the experimental months due to the fact that the age limit for strong beer in grocery stores was 16 years at the time, while it was 21 years in the monopoly stores before and after the experiment. In a longitudinal study, children born to mothers under the age of 21 in the experimental areas who were pregnant during the experimental months, were found to have fewer years of schooling, lower high school and college graduation rates, less likelihood of employment, lower earnings and a higher welfare dependency rate compared to children born to mothers outside of the experimental areas and months.⁵⁹

¹ Shield KD, Kehoe T, Gmel G, Rehm MX, Rehm J. (2012) Societal burden of alcohol, in Anderson P, Möller L, Galea G ed. Alcohol in the European Union, 2012, Copenhagen: WHO Regional Office for Europe

² Socialstyrelsen & Folkhälsoinstitutet (2012). Folkhälsan i Sverige – Årsrapport 2012 (Public health in Sweden 2012). Stockholm: Socialstyrelsen

³ Hingson R, Kenkel D. (2004). Social, Health, and Economic Consequences of Underage Drinking. In Reducing Underage Drinking: A Collective Responsibility, p. 351-382
Miller TR, Levy DT, Spicer RS, Taylor DM. 2006. Societal Costs of Underage Drinking. J. Stud. Alcohol 67: 519-528, 2006
Miller JW, Naimi TS, Brewer RD, Jones SE. (2007). Binge Drinking and Associated Health Risk Behaviors Among High School Students. Pediatrics Vol. 119 No. 1 January 2007, pp. 76-85
Cook PJ, Moore MJ. (2001). Environment and Persistence in Youthful Drinking Patterns. In Gruber J (ed.) Risky Behavior among Youths: An Economic Analysis. Chicago: University of Chicago Press, p. 375 – 438.
Cook PJ, Moore MJ. (1993). Drinking and schooling. Journal of Health Economics 12:411–29.

⁴ Hingson R, Kenkel D. (2004). Social, Health, and Economic Consequences of Underage Drinking. In Reducing Underage Drinking: A Collective Responsibility, p. 351-382
Plunk AD, Cavazos-Rehg P, Bierut LJ and Grucza RA. (2013). The Persistent Effects of Minimum Legal Drinking Age Laws on Drinking Patterns Later in Life. Alcohol Clin Exp Res. 2013 March ; 37(3): 463–469.
Cook PJ, Moore MJ. (2001). Environment and Persistence in Youthful Drinking Patterns. In Gruber J (ed.) Risky Behavior among Youths: An Economic Analysis. Chicago: University of Chicago Press, p. 375 – 438.
Kuntsche, E, Rossow, I, Simons-Morton, B, Bogt, TT, Kokkevi, A and Godeau, E (2013) Not early drinking but early drunkenness is a risk factor for problem behaviors among adolescents from 38 European and North American countries. Alcoholism, clinical and experimental research 37, 308-314.
McCambridge J, McAlaney J and Rowe R (2011) Adult consequences of late adolescent alcohol consumption: a systematic review of cohort studies. PLoS Med 8, e1000413.
Norström T and Pape H (2012) Associations between adolescent heavy drinking and problem drinking in early adulthood: implications for prevention. Journal of studies on alcohol and drugs 73, 542-548.
Pitkanen T, Lyyra AL and Pulkkinen L (2005) Age of onset of drinking and the use of alcohol in adulthood: a follow-up study from age 8-42 for females and males. Addiction 100, 652-661.
Wells JE, Horwood LJ and Fergusson DM (2004) Drinking patterns in mid-adolescence and psychosocial outcomes in late adolescence and early adulthood. Addiction 99, 1529-1541.

⁵ Sidorchuk A, Hemmingsson T, Romelsjö A, Allebeck P (2012) Alcohol Use in Adolescence and Risk of Disability Pension: A 39 Year Follow-up of a Population-Based Conscription Survey. PLoS ONE 7(8): e42083. doi:10.1371/journal.pone.0042083

⁶ Nordström P, Nordström A, Eriksson M, Wahlund LO, Gustafson Y. (2013) Risk Factors in Late Adolescence for Young Onset Dementia in Men: A Nationwide Cohort Study. JAMA Intern Med. 2013 Sep 23;173(17):1612-8.

⁷ European Commission Communication 2006/625. An EU strategy to support Member States in reducing alcohol related harm

⁸ Proposition 2010/11:47. En samlad strategi för alkohol-, narkotika-, dopnings- och tobakspolitiken (Government bill 2010/11:47. An integrated strategy for alcohol, narcotics, doping and tobacco policy)

⁹ Holder HD (ed.) (2000). Sweden and the European Union. Changes in national alcohol policy and their consequences. Stockholm: Almqvist & Wiksell.
Holder H, Kühlhorn E, Nordlund S, Österberg E, Romelsjö A and Ugland T. (1998). European Integration and Nordic Alcohol Policies — Changes in alcohol controls and consequences in Finland, Norway and Sweden, 1980–

1997. Aldershot: Ashgate.

¹⁰ Ramstedt M. (2010) Change and stability? Trends in alcohol consumption, harms and policy: Sweden 1990 – 2010. *Nordic Studies On Alcohol And Drugs* Vol. 27. 2010, 409-423

Leifman H, Hibell B, Ramstedt M, Trolldal B, Lindell A (2012) Alkoholkonsumtionen i Sverige 2011 (Alcohol consumption in Sweden 2011), STAD/SoRAD

¹² Holmberg L I. (2012). Död och sjuklighet bland unga inger oro nationellt och globalt (Mortality and morbidity among youth are worrying nationally and globally), *Läkartidningen* 2012; 16; 808-10z

¹² Statens Folkhälsoinstitut, Folkhälsodatabasen (Public health database), <http://app.fhi.se/PXwebFHI/database/folkhalsodata/databasetree.asp>

Socialstyrelsen, Statistikdatabas för dödsorsaker (Database for mortality statistics), <http://www.socialstyrelsen.se/statistik/statistikdatabas/dodsorsaker>

¹³ Leifman H. (ed.) (2013). Skolelevers drogvanor 2012 (Alcohol and Drug Use Among Students 2012). Stockholm: CAN. CAN rapport nr 133.

¹⁴ Ibid

¹⁵ Xuan Z, Nelson TF, Heeren T, Blanchette J, Nelson DE, Gruenewald P, Naimi TS. (2013). Tax Policy, Adult Binge Drinking, and Youth Alcohol Consumption in the United States. *Alcohol Clin Exp Res*. 2013 Oct;37(10):1713-9

¹⁶ Elder RW, Lawrence B, Ferguson A, Naimi TS, Brewer RD, Chattopadhyay SK, Toomey TL, Fielding JE; Task Force on Community Preventive Services. (2010) The Effectiveness of Tax Policy Interventions for Reducing Excessive Alcohol Consumption and Related Harms, *American Journal of Preventive Medicine*, Vol. 38, pp. 217–229.

Meier P, Purhouse R, and Brennan A. (2010) Policy options for alcohol price regulation: the importance of modeling population heterogeneity. *Addiction*, 105(3): 383-93.

¹⁷ Wagenaar AC, Salois MJ, Komro KA. (2009) Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. *Addiction* 2009;104:179-90.

¹⁸ Stockwell T, Zhao J, Martin G, Macdonald S, Vallance K, Treno A, Ponicki W, Tu A, Buxton J. (2013). Minimum alcohol prices and outlet densities in British Columbia, Canada: estimated impacts on alcohol-attributable hospital admissions. *Am J Public Health*. 2013 Nov;103(11):2014-20

¹⁹ Elder R et al. (2010) The Effectiveness of Tax Policy Interventions for Reducing Excessive Alcohol Consumption and Related Harms, *American Journal of Preventive Medicine*, Vol. 38, pp. 217–229.

Xuan Z et.al. (2013). Tax Policy, Adult Binge Drinking, and Youth Alcohol Consumption in the United States. *Alcohol Clin Exp Res*. 2013 Oct;37(10):1713-9

²⁰ Statens Folkhälsoinstitut, Folkhälsodatabasen (Public health database), <http://app.fhi.se/PXwebFHI/database/folkhalsodata/databasetree.asp>

²¹ Skatteverket, Alkoholskatt, Skattesatser – tidigare (Historical alcohol tax rates) <http://www.skatteverket>.

se/foretagorganisationer/skatter/punktskatter/skattesatserhistorik.4.233f91f71260075abe8800097341.html

²² Leifman H (ed.) (2013). Skolelevers drogvänor 2012 (Alcohol and Drug Use Among Students 2012). Stockholm: CAN. CAN rapport nr 133.

²³ Herttua K, Mäkelä P, Martikainen P. (2008). Changes in alcohol-related mortality and its socioeconomic differences after a large reduction in prices: a natural experiment based on register data. *American Journal of Epidemiology*, 2008, 168(10):1110–1118.

Koski A, Sirén R, Vuori E, Poikolainen K. (2007) Alcohol tax cuts and increase in alcohol-positive sudden deaths: a time-series intervention analysis. *Addiction*, 2007, 102(3):362–368.

Mäkelä P, Österberg E. (2009) Weakening of one more alcohol control pillar: a review of the effects of the alcohol tax cuts in Finland in 2004. *Addiction*, 2009, 104:554–563.

Lachenmeier DW, Taylor BJ, Rehm J. (2011) Alcohol under the radar: do we have policy options regarding unrecorded alcohol? *Int J Drug Policy*. 2011 Mar;22(2):153-60.

²⁴ Chaloupka FJ, Straif K, Leon ME (2010) Effectiveness of tax and price policies in tobacco control. *Tobacco Control* 20, 3 (2010) 235

Ross H (2004) The economics of tobacco and tobacco control in the European Union. In: Tobacco or health in the European Union. Luxembourg: Office for Official Publications of the European Communities

²⁵ Terry-McElrath YM, Harwood EM, Wagenaar AC, Slater S, Chaloupka FJ, Brewer RD, and Naimi TS. (2003) Point-of-Purchase Alcohol Marketing and Promotion by Store Type - United States, 2000—2001, *MMWR* 52(14):310-313 April 11, 2003.

Snyder LB, Milici FF, Slater M, Sun H, Strizhakova Y. Effects of Alcohol Advertising Exposure on Drinking among Youth. *Arch. Pediatr. Adolesc. Med.* 2006;160(1):18-24.

Hastings G, Anderson S, Cooke E, Gordon R. (2005) Alcohol Marketing and Young People's Drinking: A Review of the Research. *Journal of Public Health Policy* (2005) 26, 296–311

Smith LA, Foxcroft DR. (2009) The effect of alcohol advertising, marketing and portrayal on drinking behavior in young people: systematic review of prospective cohort studies. *BMC Public Health* 9:51

Saffer H, Dhaval D. (2002) Alcohol consumption and alcohol advertising bans. *Applied Economics* 2002;34(11):1325-34.

²⁶ Babor T, Caetano R, Casswell S, Edwards G, Giesbrecht N, Graham K, Grube J, Hill L, Holder H, Homel R, Livingstone M, Österberg E, Rehm J, Room R, Rossow I (2010). Alcohol: No ordinary commodity. Research and public policy (Second Edition ed.). Oxford: Oxford University Press.

Stockwell T, & Greunewald P. (2004). Controls on physical availability of alcohol In Heather N & Stockwell T (Eds.), *The Essential Handbook of Treatment and Prevention of Alcohol Problems*. Chichester: Wiley and Sons

Stockwell T. (2006). Alcohol supply, demand, and harm reduction: What is the strongest cocktail? *International Journal of Drug Policy*, 17(4), 269-277.

Popova S, Giesbrecht N, Bekmuradov D, & Patra J. (2009). Hours and days of sale and density of alcohol outlets: Impacts on alcohol consumption and damage: A systematic review. *Alcohol and Alcoholism*, 44(5), 500-516.

²⁷ Babor T et.al. (2010). Alcohol: No ordinary commodity. Research and public policy (Second Edition ed.). Oxford: Oxford University Press.

²⁸ Ibid p. 133

²⁹ Scribner RA, Mason KE, Simonsen NR, Theall K, Chotalia J, Johnson S, Schneider KS, Dejong W. (2010) An Ecological Analysis of Alcohol-Outlet Density and Campus-Reported Violence at 32 U.S. Colleges. *J. Stud. Alcohol Drugs*, 71, 184-191, 2010

Treno AJ, Grube JW, Martin SE. (2003) Alcohol availability as a predictor of youth drinking and driving: a hierarchical analysis of survey and archival data. *Alcohol Clin Exp Res* 27:835–40.

³⁰ Liang W and Chikritzhs T. (2011) Revealing the link between licensed outlets and violence: counting venues versus measuring alcohol availability. *Drug and Alcohol Review*, 30 (5): 524-535

³¹ Stockwell T and Chikritzhs T. (2009). Do relaxed trading hours for bars and clubs mean more relaxed drinking? A review of international research on the impacts of changes to permitted hours of drinking. *Crime Prevention and Community Safety*, 11 (3): 153–170.

³² Kypri K, Jones C, McElduff P, Barker D. (2011) Effects of restricting pub closing times on night-time assaults in an Australian city. *Addiction* 106(2): 303-310

Rossow I & Norström T (2012) The impact of small changes in bar closing hours on violence. The Norwegian experience from 18 cities. *Addiction*, 107: 530–537

³³ Ibid

³⁴ Chikritzhs T, Stockwell T (2007) The impact of later trading hours for hotels (public houses) on breath alcohol levels of apprehended impaired drivers. *Addiction*, 102, 1609–1617

³⁵ Wagenaar AC and Toomey TL (2002). Effects of minimum drinking age laws: Review and analyses of the literature from 1960 to 2000. *Journal of Studies on Alcohol* (Supplement 14): 206-225.

³⁶ Cook P J (2007). *Paying the tab: The costs and benefits of alcohol control*. Princeton, NJ, Princeton University Press.

Carpenter C S and Dobkin C. (2007). *The Effect of Alcohol Consumption on Mortality: Regression Discontinuity Evidence from the Minimum Drinking Age*. . N. B. o. E. Research. Cambridge, MA. NBER Working Paper 13374.

³⁷ Kypri K, Voas RB, Langley JD, Stephenson SCR, Begg DJ, Tippetts AS and Davie GS. (2006). “Minimum purchasing age for alcohol and traffic crash injuries among 15-to 19-year-olds in New Zealand.” *American Journal of Public Health* 96(1): 126-131.

³⁸ Shults RA, Elder RW, Sleet DA, Nichols JL, Alao MO, Carande-Kulis VG, Zaza S, Sosin DM, Thompson RS; Task Force on Community Preventive Services (2001) Reviews of evidence regarding interventions to reduce alcohol-impaired driving. *Am J Prev Med*. 2001 Nov;21(4 Suppl):66-88.

³⁹ Hahn RA, Middleton JC, Elder R, Brewer R, Fielding J, Naimi TS, Toomey TL, Chattopadhyay S, Lawrence B, Campbell CA; Community Preventive Services Task Force. (2012). Effects of alcohol retail privatization on excessive alcohol consumption and related harms: a community guide systematic review. *Am J Prev Med*. 2012 Apr;42(4):418-27

⁴⁰ Norström T, Miller T, Holder H, Österberg E, Ramstedt M, Rossow I, Stockwell T. (2010) Potential consequences of replacing a retail alcohol monopoly with a private licence system: results from Sweden. *Addiction*, 105 (12), p. 2113–2119

⁴¹ Rossow I, Karlsson T, Raitasalo K. Old enough for a beer? Compliance with minimum legal age for alcohol purchases in monopoly and other off-premise outlets in Finland and Norway. *Addiction* 2008; 103: 1468–73.

⁴² Systembolaget 2012 Responsibility Report

⁴³ Communication from Björn Lundkvist, Systembolaget

⁴⁴ Lönnqvist U, Rehnman C, Larsson J, Wallin E, Andréasson S. Några folköl är väl inte så farligt... En studie av legitimationskontroll vid inköpsförsök i livsmedelsaffärer i Stockholm. (A few beers don't matter, do they... A study of ID checks at purchase attempts in grocery stores in Stockholm). Stockholm: The STAD project; 1998. 4.

⁴⁵ Willner P, Hart K, Binmore J, Cavendish M, Dunphy E. Alcohol sales to underage adolescents: an unobtrusive observational field study and evaluation of a police intervention. *Addiction*, 95,1373-88.
Forster JL, Murray DM, Wolfson M, Wagenaar AC. Commercial availability of alcohol to young people: results of alcohol purchase attempts. *Prev. Med.* 1995;24:342-247.
Preusser DF, Williams AF. Sales of alcohol to underage purchasers in three New York counties and Washington, D.C. *J. Public Health Policy* 1992;13(3):306-17.
Schofield MJ, Weeks C, Sanson-Fisher R. Alcohol sales to minors: a surrogate study. *Prev. Med.* 1994;23:827-31.
Paschall MJ, Grube JW, Black C, Flewelling RL, Ringwalt CL, Biglan A. Alcohol outlet characteristics and alcohol sales to youth: results of alcohol purchase surveys in 45 Oregon communities. *Prev. Med.* 2007;8:153-9.

⁴⁶ Miller T, Snowden C, Birckmayer J, Hendrie D. Retail alcohol monopolies, underage drinking, and youth impaired driving deaths. *Accid. Anal. Prev.* 2006;38(6):1162-7.

⁴⁷ Analys av trafiksäkerhetsutvecklingen 2012 (Analysis of traffic safety development 2012). Trafikverket 2013:089

⁴⁸ Alkoholpåverkade personbilsförare inblandade i dödsolyckor 2002 (Intoxicated drivers involved in fatal accidents 2002). Vägverket, Publikation 2004:161

⁴⁹ Norström T. (1997) Assessment of the impact of the 0.02% BAC-limit in Sweden. *Studies on Crime & Crime Prevention*, 6: 245-258

⁵⁰ Babor T et.al. (2010). *Alcohol: No ordinary commodity. Research and public policy* (Second Edition ed.). Oxford: Oxford University Press.

⁵¹ Shults RA, Elder RW, Sleet DA, Nichols JL, Alao MO, Carande-Kulis VG, Zaza S, Sosin DM, Thompson RS; Task Force on Community Preventive Services. (2001) Reviews of evidence regarding interventions to reduce alcohol-impaired driving. *Am J Prev Med.* 2001 Nov;21(4 Suppl):66-88.

The Community Guide. Task Force Finding and Rationale Statement, Reducing Alcohol-impaired Driving: Publicized Sobriety Checkpoint Programs. <http://www.thecommunityguide.org/mvoi/aid/RRsobrietyckpts.html>. Accessed 2013-09-25

⁵² Harold D. Holder, Community Prevention of Young Adult Drinking and Associated Problems, <http://pubs.niaaa.nih.gov/publications/arh284/245-248.htm>

⁵³ Norström T, Trolldal B. (2013) Was the STAD programme really that successful? Nordic Studies On Alcohol And Drugs 2013;30(3):171-8

⁵⁴ Ramstedt M, Leifman H, Müller D, Sundin E, Norström T. (2013) Reducing youth violence related to student parties: Findings from a community intervention project in Stockholm. Drug Alcohol Rev. 2013 Nov;32(6):561-5

⁵⁵ Hallgren M, Andréasson S. (2013) The Swedish six-community alcohol and drug prevention trial: effects on youth drinking. Drug Alcohol Rev. 2013 Sep;32(5):504-11

⁵⁶ Statens Folkhälsoinstitut (2012) Alcohol statistics 2010. Östersund: Statens Folkhälsoinstitut. R 2012:03, table 5

⁵⁷ Ramstedt M. (2002) The repeal of medium-strength beer in grocery stores in Sweden – the impact on alcohol-related hospitalizations in different age groups. In: Room R, (ed.) The Effects of Nordic Alcohol Policies. What happens to drinking and harm when alcohol controls change? Helsinki: Nordic Council for Alcohol and Drug Research; 2002.

⁵⁸ Mäkelä P, Rossow I, Tryggvesson K. (2002) Who drinks more and less when policies change? – The evidence from 50 years of Nordic studies. In: Room R (ed.) The Effects of Nordic Alcohol Policies. What happens to drinking and harm when alcohol controls change? Helsinki: Nordic Council for Alcohol and Drug Research; 2002.

⁵⁹ Nilsson JP. (2008) Does a pint a day affect your child's pay? The effect of prenatal alcohol exposure on adult outcomes. cemmap working paper CWP22/08.



INTERVIEW

"BEING DRUNK AT PARTIES IS NORMAL"

- Seven young people talk

Beyond the research and the statistics contained in this report there are, of course, the young people themselves and their thoughts, feelings and reflections on the subject of alcohol. We'd like to introduce you to seven young Swedes and their conversations about alcohol and youth drinking.

Lina, Clara, Eric and Carl-Fredrik are all 17 years old and are currently in their second year of senior high school studies in Stockholm. In the school's spartan group room, they talk about a typical week in their lives. It includes studying and hanging out with their friends, and then, at last and after a long week, comes the weekend. Lina and Clara prefer private parties, while Carl-Fredrik and Eric prefer bars, but the one thing all four youngsters have in common is that, from time to time, and despite being less than 18 years old, they drink alcohol.

According to Clara, the first time she got drunk was at a party at someone's home when she was 12 years old.

"Really? That early? Shouldn't you be out playing at that age?" exclaims Carl-Fredrik, who then goes on to say that he was 13 years old when he got drunk for the first time. It was curiosity that led him to try it.

In a café, in another part of Stockholm, a group of 15 year olds have met up for a coffee between the end of the school day and the start of their homework for the evening. School takes a lot of their time now, but they usually manage to fit in a quick chai latte, smoothie or coffee. Emilia, Evelina and Leo are three of the teenagers around the table.

"I've never been drunk," says Leo. Doesn't he drink alcohol? Well, that time he managed to have a swig of low alcohol beer at the family's country place a few years ago doesn't really count, he reckons. He doesn't feel any desire to drink alcohol. The other teenagers around the table nod in agreement. They think they're too young to drink.

"I want to wait until I'm 18 before I drink," says Emilia.

In the group room, 17 year old Carl-Fredrik tells the tale of how, during a cruise, he “managed to borrow” a key that turned out to be for the door to the ship’s spa area. The others laugh and shake their heads. Clara talks about the party that got out of hand when the number of guests got out of control. Alcohol plays the leading role in a lot of their stories. Eric explains, “Being drunk at parties is normal,” and the others agree. “Alcohol makes people let go. Drinking gives you Dutch courage,” adds Clara. “You’re braver – it gives you the nerve to get to know other people or to get together with someone. Because Swedes are usually a bit uptight, right?” The others agree with Clara.

The teenagers sitting around the table in the café talk about friends who drink, old friends they have drifted apart from and don’t see so much these days. Alcohol is a fairly uncommon feature in the lives of Leo’s, Emilia’s and Evelina’s circle of friends.

“I’d feel like a jerk if I drank. It sort of feels uncool to say you’re going out boozing,” says 15-year old Leo.

“I’ve joined UNF,” says Evelina. “It’s the Youth Temperance Association, and you can join it if you don’t want to drink,” she explains to the others.

The research presented in this report shows that the risk of violence, sexually transmitted diseases and poor performances at school increase for young people if they drink. But Lina, Clara, Carl-Fredrik and Eric don’t recognise themselves in this scenario, although they do have friends and acquaintances who’ve experienced this sort of thing because they drank – things like alcohol poisoning and ending up in fights. These 17-years olds say they have their drinking under control and don’t intend to stop, although Lina does say that she wonders sometimes about the effects of alcohol.

“I’ve heard that drinking when you’re young can affect your brain’s development. If I could see the research, I might drink less,” she says and asks what the researchers in the report have found. How do they think youth drinking could be reduced and what do they say about the harm that drinking does in young people?

When Eric hears that one of the researchers’ suggestions is that Sweden should retain its right to control the form taken by alcohol marketing, he asks, “Have you see “Project X – the party you’ve

only dreamed about?” It’s a teen movie only about partying, and yes, you feel you’d like to join,” he says and looks at the others, who nod in agreement.

Advertising sticks. The 17-year olds can name at least three types of alcohol that they’ve recently seen advertised. And the same is true for the 15-year olds. Leo puts on a different voice, and when he lowers it, he sounds exactly like the male voice in an alcohol advert currently running on TV.

So what other methods do the researchers propose? Well, they suggest that if we are to reduce young people’s access to alcohol, we need to do something about the illegal sale of alcohol to young people that occurs in restaurants and bars. Carl-Fredrik remembers that he was 15 when he got in at a bar with an age limit of 18 for the first time.

Alcohol seems to be easily accessible for the young people in both the group room and the café. If the bar’s not an option, there are always older friends, bootleggers and their parents’ drinks cabinet when they want a beer, wine or spirits. If they want it. A week of school and homework is moving towards a new weekend and Carl-Fredrik has decided on a dry one this time. “It’s very easy to get into the habit of drinking a bit too much sometimes. It’s good to take it easy sometimes as well,” says Carl-Fredrik.

At the café, Emilia, Leo and Evelina start getting their things together and Leo mentions that he has no plans for the upcoming weekend. Which is, he says, a bit boring. He says he’s looking for things you can do if you don’t want to drink alcohol.

“You should join the UNF. There’s stuff going on there all the time,” says Evelina and starts rooting through her bag while she talks about playing hide and seek at IKEA. She takes out information leaflets about the Youth Temperance Association and puts them on the coffee table.

“Sounds cool,” says Leo and takes a leaflet. Then it’s time to move on from the afternoon coffee break and head home. “See you at school tomorrow!”

N.B. some of the names of the young people in this article are fictitious.



CURRENT RESEARCH REPORTS

THE THEME OF THIS YEAR'S REPORT IS CHILDREN AND YOUNG PEOPLE, BUT OTHER AREAS OF ALCOHOL-RELATED RESEARCH HAVE ALSO PRESENTED INTERESTING NEW FINDINGS. WE HAVE PLUCKED FIVE PEARLS FROM THE LAST YEAR'S FLOOD OF ALCOHOL RESEARCH. ALL FIVE HAVE A COMMON DENOMINATOR: THEY ALL PRESENT EXCITING RESEARCH WITH RESULTS THAT DESERVE TO BE HIGHLIGHTED IN A SWEDISH CONTEXT.

ALCOHOL CONSUMPTION AND COMPLICATIONS AFTER SURGERY

High alcohol consumption is common among surgical patients and a risk for complications after surgery. Heavy consumers have been shown to reduce their complications after surgery by over 50% by abstaining from alcohol four weeks before surgery.

A review and summary of 55 studies published since 2000 on alcohol consumption before, and complications after, surgery has been made by Danish researchers. Alcohol consumption before operation increased the risk for several complications after surgery, as a 70% per cent higher risk for infections, 20% higher risk for wound complications, 80% higher risk of lung complications and 20% prolonged stay at the hospital. This is supported by several biological mechanisms of alcohol as reduction of immune capacity, increase of stress in connection with surgery and reduction of blood coagulation. Low to moderate alcohol consumption showed no association with complications after operation but very few studies of this were available.

Patients with alcohol misuse according to screening up to a year before surgery have been shown to have a higher risk for complication after operation. In a study of almost 9 000 US male veterans the researchers looked at whether alcohol consumption just before the operation was of importance for such patients. The researchers found that consumption of more than two drinks per day, two weeks before surgery, did increase complications after surgery, length of

stay in hospital and days in intensive care unit, for patients with an alcohol misuse according to screening the year before. Of the 9 000 participants in the study only slightly more than 400 patients belonged to this group. No significant increase in harm for patients that had documented a consumption of less than two drinks per day was found, including those that had been screened for all level of alcohol misuse in the previous year.

References

- Eliassen M et.al. (2013) Preoperative Alcohol Consumption and Postoperative Complications: A Systematic Review and Meta-analysis. *Ann Surg.* 2013 May 31. [Epub ahead of print]
- Rubinsky AD et.al. (2013) Postoperative risks associated with alcohol screening depend on documented drinking at the time of surgery. *Drug Alcohol Depend.* 2013 Oct 1;132(3):521-7.



EFFECTS FROM DRINKING DURING PREGNANCY 22 YEARS AFTER BIRTH

Drinking alcohol during pregnancy can lead to so called fetal alcohol syndrome for the child, with physical, behavioral, and cognitive abnormalities. But exposure of alcohol before birth can lead to less severe problems as behavior and emotional problems and deficits in learning and memory. In a study from Pittsburg, USA, 760 women and their children were followed from pregnancy and until the children were 22 years of age.

The mothers were interviewed during their fourth prenatal month, seventh month, and delivery, and the mothers and the children were seen at 8 and 18 months, and 3, 6, 10, 14, 16, and 22 years. The children that had been exposed to alcohol at each trimester had increased behavioral, emotional and social problems, as anxious/depressed, rule-breaking, aggressive behavior and attention problems at the age of 22. The effects were significant at one drink per day and greater for higher levels of mother's consumption and if the mother had consumed alcohol across pregnancy compared to in first trimester only. Binge drinking did not have an additional effect to average daily volume of alcohol consumption.

The authors conclude "there is no safe level or safe time during pregnancy for women to drink. These data demonstrate that the effects of prenatal alcohol exposure, even at low to moderate levels, extend into young adulthood and are most likely permanent."

Reference:

Day NL, Helsel A, Sonon K and Goldschmidt L. (2013), The Association Between Prenatal Alcohol Exposure and Behavior at 22 Years of Age. *Alcoholism: Clinical and Experimental Research*, 37: 1171–1178

A black and white photograph showing a close-up of a rough, textured wall, possibly made of stone or concrete. The wall has a mottled appearance with various shades of gray and some darker, more irregular patches. In the center of the image, there is a rectangular sign with a white border and a black background. The word "BAR" is written in large, bold, white capital letters on the sign. The sign is slightly tilted and appears to be attached to the wall. The overall composition is simple and focuses on the contrast between the rough wall and the clean, bold text of the sign.

BAR

DO RESTAURANTS OPENING HOURS MATTER FOR VIOLENCE?

In Sweden, as in other Nordic countries, a majority of cases of violence is related to alcohol. According to surveys there were around 450 000 cases of assault 2011 in Sweden. The respondents state that the perpetrator was intoxicated in around 65 percent of the cases.

Restaurants and bars are “hot spots” for violence but the extent of violence varies considerably between different establishments. Earlier studies have shown that increases in violence around restaurants and bars is connected to increased sales of alcohol, either by an increase in the number of customers or by an increase in consumption per customer, and that the level of intoxication increases by the hour at night-time. Another explanation for the increase in violence could be that later closing hours allow for longer time of “pre-loading” in private homes before going out, in which case the customers may be more intoxicated and more likely to be involved in violence in or around bars and pubs.

In Norway closing hours of on-trade establishments are decided by the municipality within a national maximum of 3 a.m. One study has looked at the effect of small changes in closing hours on violence in 18 Norwegian cities which had changed closing hours between 1 a.m. and 3 a.m. in the period from 2000 to 2010. In 10 cities the hours were restricted, in 3 cities the hours were extended and in 5 cities the closing hours were first extended and then restricted. The changes in closing hours were all between half an hour and two hours.

Extending closing hours by one hour resulted in a 16% increase of police-reported assaults, which corresponds to an increase of 5 assaults per 100 000 inhabitants. The effect was symmetrical, i.e. restricting closing hours decreased the number of assaults to the same degree.

The authors conclude that “even minor restrictions in closing hours for on-premise alcohol sales could be an attractive measure to curb night-time assaults in inner city areas. The findings also provide evidence-based arguments against the relaxation of the trading hours that is commonly promoted by the industry.”

References

Rossow I & Norström T. (2012) The impact of small changes in bar closing hours on violence. The Norwegian experience from 18 cities. *Addiction*, 107: 530–537.



WHICH MATTERS MORE? THE RISKS OR THE BENEFITS OF ALCOHOL?

It seems reasonable that decisions on policies on alcohol should be guided by the extent of harm its consumption causes. If policies and harm do not seem to match, the reason could be that the public and decision-makers are not aware of the up-to-date scientific facts on harm. Alternatively, the reason could be that the perceived benefits to users and to society influence the political decisions.

In an effort to test these alternatives a survey was made on perceived harms and benefits of nine addictive substances, including alcohol and tobacco, to 48 French experts, psychiatrists, physicians and other medico-social professions. In addition, two general questions were put to the experts, on whether they would prefer to consume the product or not, and whether they would like to live in a society where the product was consumed or not.

For each substance, six categories of harms and six categories of benefits, both to users and to society, were rated on a ten-point scale from “no damage” or “no benefit” to “extreme and frequent damage” or “extreme benefit”.

Alcohol was rated as the drug causing most damage overall both to the user and to society. Tobacco, being the other legal substance in the survey, was rated as the fourth most damaging drug. Alcohol was at the same time perceived as giving the most benefits both to users and society. Tobacco was seen as the second most beneficial drug. In spite of alcohol being seen as the most damaging product, a majority of the experts stated that they preferred to consume alcohol compared to not to consume, and that they preferred

to live in a society where alcohol is consumed. For tobacco the result was the opposite. In spite of giving it lower rating on damages a majority preferred not to smoke and to live in a society where tobacco is not used.

The authors conclude that “having an outstanding knowledge of harm to users did not prevent these experts from considering benefits first” and that “benefits have significant importance in opinion making, even among damage experts”.

References:

Bourgain C et.al. (2012), A damage/benefit evaluation of addictive product use. *Addiction*, 107: 441–450.



DOES ABSTINENCE MEAN YOU DIE YOUNGER?

A great number of studies have demonstrated that non-drinkers have a higher risk of death than light-to-moderate drinkers. There is an ongoing scientific discussion on the reason for these results. Two categories of hypothesis have been put forward: that some biological effects of alcohol reduces the risk for death or that non-drinkers are a diverse group where some subgroups have an equal or lower risk of death than moderate drinkers and some subgroups have a greater risk. Two studies from University of Colorado Boulder have looked into whether the reasons people give for not drinking matters for the risk of death from different diseases. In a U.S. national survey of more than 40 000 adults aged 21 or over in 1988, not only alcohol consumption was reported but also reasons for not drinking. The respondents were followed to 2006, up to 19 years. People stating that the main reason for not drinking was “have responsibility to my family”, “religious or moral reasons” or “don’t socialize very much” had an equal risk of death as current drinkers with a consumption of less than one drink per day. People stating reasons as “do not like alcohol”, “am an alcoholic”, “thought I might become an alcoholic”, “medical or health reasons” and “costs too much” had a higher risk of death.

For drinkers the risk of death increased with the numbers of drinks consumed per day. Compared to current light drinkers there was a 16% higher mortality risk for those who drink 1 to less than 2 drinks per day on average, to 68% higher for those who drink 2 to less than 3 drinks, and an over two-fold risk of death for those who drink 3 or more drinks per day over the follow-up period.

The authors conclude that “evidence demonstrates that many nondrinkers have quite positive mortality prospects, on par with those of light drinkers, if not better.” and “In addition to underscoring the risks of heavy alcohol consumption, public policy messages should note the mortality benefits of abstaining from drinking.”

References:

Rogers RG et.al. (2013) Nondrinker Mortality Risk in the United States. *Population Research and Policy Review* June 2013, Volume 32, Issue 3, pp 325-352

Rogers RG et.al. (2013) Lifetime abstainers and mortality risk in the United States. Working paper, Institute of Behavioral Science, University of Colorado Boulder, <http://www.colorado.edu/ibs/pubs/pop/pop2012-0006.pdf>

Researchers and authors:

HAROLD HOLDER

Harold Holder, Chair of the research group. Harold D. Holder, Ph.D., is the former Director of the Prevention Research Center (PRC) of the Pacific Institute for Research and Evaluation, a national center for prevention research.

His published work has addressed a number of public policy studies including the impact of changes in retail sales of wine and spirits on drinking, alcohol-involved traffic crashes, and environmental strategies as part of comprehensive approaches to prevention. Dr. Holder has undertaken a series of collaborative studies in the Nordic Countries to study the effects of public policies. In addition, Dr. Holder has participated with prevention scientists from a dozen countries in international projects to document the effects of alcohol policy. The projects have produced three books in which he was a co-author, *Alcohol Policy and the Public Good* (1994), *Alcohol: no ordinary commodity – Research and public policy* (2003) and *Alcohol: no ordinary commodity*, second edition (2010).

Recently Dr. Holder chaired an international research group in an evaluation of Swedish research on alcohol, narcotics, doping, tobacco and gambling for the Swedish Council for Working Life and Social Research. The evaluation report was published in 2012.

Holder has published more than 150 scientific papers in refereed journals and collected volumes and was appointed to the National Advisory Council on Alcohol Abuse and Alcoholism, National Institutes of Health, effective 1998.

TANYA CHIKRITZHS

Professor Chikritzhs leads the Alcohol Policy Research team at the National Drug Research Institute. She has qualifications in epidemiology and biostatistics, some 15 years' experience in alcohol research and a national profile as an expert in her field. In 2012 she was awarded the prestigious Commonwealth Health Ministers Award for Excellence in Health and Medical Research.

Dr. Chikritzhs has published some 160 peer reviewed journal articles, reports and book chapters on evaluations of alcohol policy and alcohol epidemiology. Among these reports is the World Health Organization's International Guide for Monitoring Alcohol Consumption and Related Harm. She is Principal Investigator for high profile national projects such as the National Alcohol Indicators Project (NAIP) and the National Alcohol Sales Data project. The NAIP is Australia's central source of authoritative information on the epidemiology of alcohol in Australia and serves

as a fundamental information base for the National Alcohol Strategies. Dr. Chikritzhs is regularly invited to contribute to public debate on alcohol issues in the media and has contributed to hundreds of radio and television articles.

TIMOTHY NAIMI

Timothy Naimi, MD, MPH, is Associate Professor of Medicine at Boston University Schools of Medicine and Public Health. He is also active as physician at Boston Medical Center. Dr. Naimi's general fields of research are alcohol control policies, binge drinking, underage drinking and alcohol epidemiology.

SVEN ANDRÉASSON

Sven Andréasson is the Adjunct Professor of Social Medicine at the Karolinska Institute's Department of Public Health Sciences. He is also a Senior Physician at the Stockholm Centre for Dependency Disorders and is in charge of operations at the Riddargatan 1 clinic.

Sven Andréasson's research involves both epidemiological studies of alcohol and narcotics usage in the population, and studies aimed at identifying the most effective methods of alcohol problem-related prevention.

TIM STOCKWELL

Tim Stockwell is Director of Centre for Addictions Research of British Columbia, Canada and Professor at the Department of Psychology, University of Victoria, BC, Canada.

Tim Stockwell has 35 years of experience as a researcher, administrator, educator and clinician in the UK, Australia and Canada. His research has covered many aspects of substance use policy, prevention, treatment methods, liquor licensing issues, taxation and the measurement of drinking patterns and their consequences. He has written over 200 peer reviewed journal articles and 100 books, chapters and reports. He has worked with international organisations (WHO, UNDCP) and many provincial, state and national governments.

He has also been Director of the Alcohol Education and Research Foundation in Australia and is a member of Canada's National Alcohol Strategy Advisory Committee and the WHO Technical Advisory Committee on Alcohol Epidemiology.

He holds degrees from Oxford University (MA Hons, Psychology and Philosophy), University of Surrey (MSc Clinical Psychology) and the University of London (PhD Institute of Psychiatry).



IOGT-NTO is Sweden's largest temperance organisation and its vision is of a society, a world, in which people are not prevented from living free and rich lives by alcohol and other drugs.

The Swedish Society of Medicine (SLS) is a non-profit organisation that is unaffiliated with any political party or trade union and whose primary mandate is to promote better healthcare for the patients of today and tomorrow.

A Swedish language version of this report is also available from IOGT-NTO (www.iogt.se) or The Swedish Medical Society (www.sls.se).



Street address: Gammelgårdsvägen 38, Stora Essingen
Box 12825, SE-112 97 Stockholm, Sweden
Tel: +46 8 672 60 00
Fax: +46 8 672 60 01
Email: info@iogt.se
Website: www.iogt.se



**Svenska
Läkaresällskapet**

The Swedish Society of Medicine
Street address: Klara Östra Kyrkogata 10
Box 738, SE-101 35 Stockholm, Sweden
Tel: +46 8 440 88 60
Fax: +46 8 440 88 99
Email: sls@sls.se
Website: www.sls.se